

REMARKS

The paper is in response to the Office Action mailed May 14, 2009 ("the Office Action"). The foregoing amendment amends claims 30, 52, 66, and 67. Claims 30-76 are now pending in view of the amendments. Applicants respectfully request reconsideration of the application in view of the above amendments to the claims and the following remarks. For Examiner's convenience and reference, Applicants present remarks in the order that the Office Action raises the corresponding issues.

In connection with the prosecution of this case and any related cases, Applicants have, and/or may, discuss various aspects of the disclosure of the cited references as those references are then understood by the Applicants. Because such discussion could reflect an incomplete or incorrect understanding of one or more of the references, the position of the Applicants with respect to a reference is not necessarily fixed or irrevocable. Applicants thus hereby reserve the right, both during and after prosecution of this case, to modify the views expressed with regard to any reference.

Please note that Applicants do not intend the following remarks to be an exhaustive enumeration of the distinctions between any cited references and the claims. Rather, Applicants present the distinctions below solely by way of example to illustrate some of the differences between the claims and the cited references. Finally, Applicants request that Examiner carefully review any references discussed below to ensure that Applicants' understanding and discussion of any reference is consistent with Examiner's understanding.

Unless otherwise explicitly stated, the term "Applicants" is used herein generically and may refer to a single inventor, a set of inventors, an appropriate assignee, or any other entity or person with authority to prosecute this application.

Claim Objection

The Office Action objects to the numbering of the claims, in particular claims 67 and 68 misnumbered as 66 and 67. Those claims have been amended to correct the numbering of the claims.

Claim Rejection – 35 U.S.C. § 112

The Examiner rejects claim 52 as being indefinite for including the phrase, "can be automatically scanned...." The expression "can be automatically scanned" is based on an erroneous translation of the original German wording "[ist] automatisch abtastbar", for which "is automatically scannable" is a more suitable translation. Therefore, claim 52 has been amended as such, and the Applicant respectfully requests that the rejection of claim 52 be withdrawn.

Rejection under 35 U.S.C §103(a)

The Office action rejects claims 30-35, 38-40, 43-45, 47, 49-58, 61-63, and 71-74 under 35 U.S.C §103(a) over *Shimoyama et al.* (U.S. Patent No. 7,081,917)¹ and rejects claims 36, 37, 41, 42, 46, 48, 59, 60, 64-70, and 75 under 35 U.S.C §103(a) over *Shimoyama et al.* (U.S. Patent No. 7,081,917).

Under 35 U.S.C §103(a), "[a] patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." According to MPEP §2142, "[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness." Finally, MPEP 2141.III notes that:

"The key to supporting any rejection under 35 U.S.C. 103 is the *clear articulation of the reason(s) why the claimed invention would have been obvious*. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that "[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR*, 550 U.S. at ___, 82 USPQ2d at 1396." (emphasis added)

¹ Because *reference* is only citable under 35 U.S.C. §102(e) or 35 U.S.C. §102(a), Applicants do not admit that *reference* is in fact prior art with respect to any or all of the claims of the present application, but rather reserve the right to swear behind *reference* in this application or a divisional, continuation, or CIP thereof, thereby removing it as a reference.

Shimoyama discloses an automatic collimation surveying apparatus that formed as a telescope with a collimation camera optical system including an illumination unit emitting illumination light, a wide-angle CCD camera optical system, an image processing unit for discriminating a point of measurement on a target object and means to point out said (single) target point, a collimation unit to zoom onto said target point and a distance measuring portion for measuring the distance to said point.

The method according to *Shimoyama* first teaches the illumination of a target object by using a flash illumination unit illuminating the camera's field of view, whereas the reflected illumination light is detected by the camera.

Shimoyama **explicitly does not use a laser beam** to scan a spatial segment, but uses a **light source or a flash light** being turned on and off.

"However, since it is difficult to illuminate the entirety of the field of view of a wide-angle CCD camera element 88 with the laser beam, the present embodiment is provided with an illumination device that emits illumination light of visible light brought about by the light source 80 such as an LED, etc. so as to easily spread the illumination light over the entirety of the field of view." [*Shimoyama*, column 7, lines 5-11]

"Also, in the present embodiment, the light source 80 is caused to flash by a changeover instruction for turning on and off, which is from the CPU 58." [*Shimoyama*, column 7, lines 14-17]

The optical axes of the collimation camera optical system and the wide-angle camera optical system are **parallel**.

"The optical axis 01 of the wide-angle camera optical system 89 is constituted to be parallel to the collimation axis 0 of the collimation camera optical system 47."

[*Shimoyama*, column 6, lines 20-22]

Thus, the **direction of the emitted illumination light is not changeable** relative to the optical axis of the apparatus as a whole in *Shimoyama*. The target scan neither occurs by using a laser beam, nor does said laser beam rotate around two rotation axes relative to an apparatus axis as is disclosed by the present application.

Changing the emission direction of the laser radiation of the current invention is discussed in the description and illustrated by Figure 11.

"Laser radiation L which is guided by means of deflection elements 13 onto a rotatable pair 14 of prisms as a control component is emitted by a first radiation source 12. By means of the rotatable pair 14 of prisms, the angle at which the laser radiation L strikes a mirror 15 is periodically varied so that a rosette-like scanning movement of the laser beam L emitted by the measuring appliance 4b through the hood 9 results." [P. 27, lines 24-32]

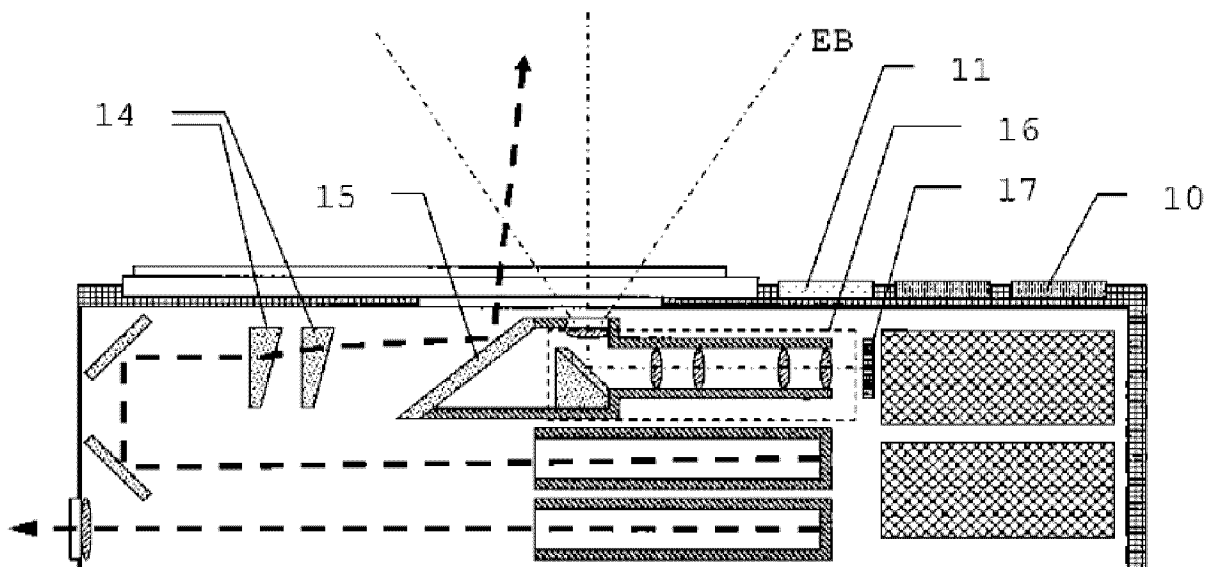


Figure 11 (current application)

After subsequently receiving the reflected illumination light the collimation camera optical system according to *Shimoyama* zooms onto one single target measuring point step by step and finally measures the distance to said target point by using a second photometric light.

"Also, the collimation camera optical system 47 includes a distance measuring portion optical system, which is composed of a light emitting element 74 such as an infrared ray LED emitting photometric light..." [Shimoyama, column 6, lines 35-38]

Hence *Shimoyama* describes **two different light beams** being emitted by two different light sources, the first beam illuminating the target and the second beam measuring the distance to the target point, whereas the current invention provides only one light beam for performing both functionalities.

Moreover, the method and apparatus according to *Shimoyama* is not capable of measuring **continuously over a time and along a trajectory**.

"... as the above-described measurement is completed at one point, the surveying apparatus 110 is moved to the next point. As described above, the targets 104 and 108 are measured from end to end, and such a measurement is carried out at all planned points of measurement." [Shimoyama, column 13, lines 21-25]

In direct contrast, the current application provides a practically continuous measurement when a controller moves around in an environment or a room to be measured, the position and orientation of the measuring appliance being continuously detected, as is shown in Figure 9.

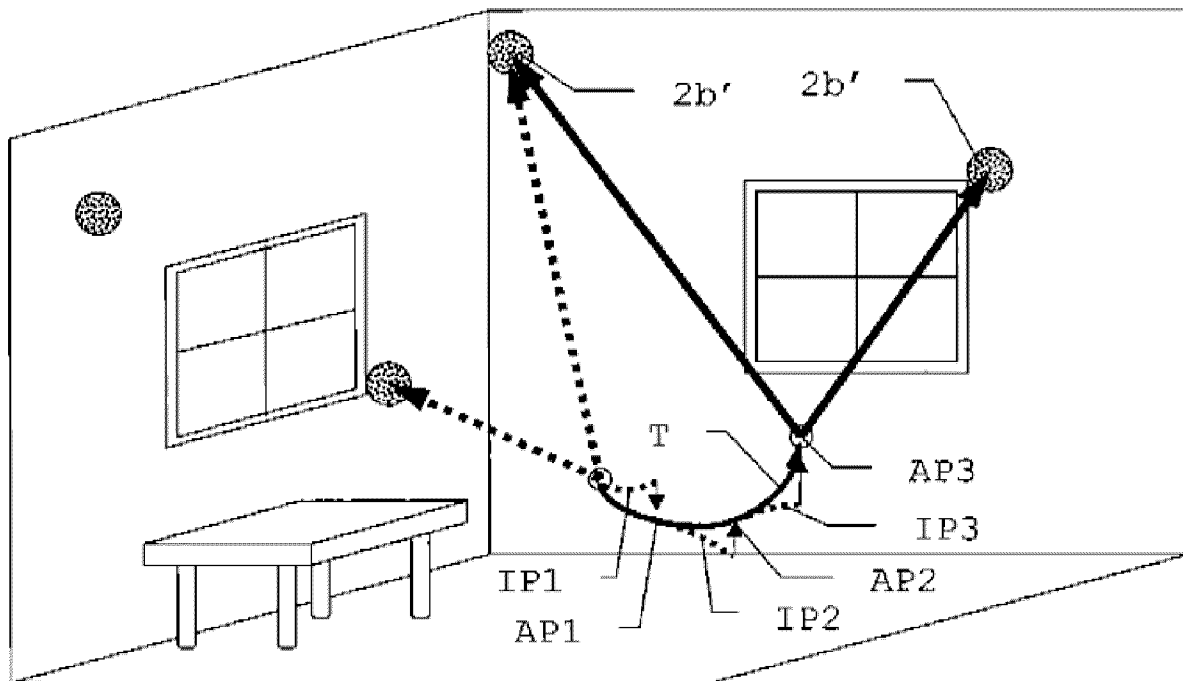


Figure 9 (current application)

Further *Shimoyama* does not disclose an automatic identification and surveying of the reference points by the system. No system ability for continuous correction of the measurements of positioning and orientation systems based on other principles of operation, said correction preferably taking place in the background, is provided either.

The method and apparatus disclosed by *Shimoyama* lack the features to solve the problem formulations of the current application, i.e. to provide a method, a hand-held apparatus and a system which permits the determination of the actual position and of the orientation of a hand-held measuring appliance even in highly intersected terrain or in interior rooms by measuring distances and angles to **at least two measuring points**, the shortening of the measurements for determining actual position and actual orientation as well as the periods between the necessary measurements in order to achieve a practically **continuous measurement**.

Thus, *Shimoyama* does not teach or suggest to one of ordinary skill in the art how to solve the current application's problem formulation, nor does he have a motivation to equip a

hand-held measuring appliance according to the present invention in view of the features disclosed by *Shimoyama* as such teachings are insufficient to provide a suitable technical solution.

Therefore, the Applicant respectfully submits that the method disclosed in Claim 30 and the measuring appliance disclosed in Claim 52 as well as the dependent claims referring to Claims 30 or 52 are therefore not obvious over *Shimoyama*. As such, the Applicant respectfully requests that the rejections be withdrawn.

Charge Authorization

The Commissioner is hereby authorized to charge payment of any of the following fees that may be applicable to this communication, or credit any overpayment, to Deposit Account No. 23-3178: (1) any filing fees required under 37 CFR § 1.16; (2) any patent application and reexamination processing fees under 37 CFR § 1.17; and/or (3) any post issuance fees under 37 CFR § 1.20. In addition, if any additional extension of time is required, which has not otherwise been requested, please consider this a petition therefor and charge any additional fees that may be required to Deposit Account No. 23-3178.

CONCLUSION

In view of the foregoing, Applicants submit that the pending claims are allowable. In the event that Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview or overcome by an Examiner's Amendment, Examiner is requested to contact the undersigned attorney.

Dated this 13th day of August, 2009.

Respectfully submitted,

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